

NOTES ON PARMELIA SUBGENUS EVERNIIFORMES
WITH DESCRIPTIONS OF SIX NEW SPECIES

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Parmelia subgenus Everniiformes (Hue) Hale & M. Wirth
Parmelia section Everniiformes Hue, Journ. de Bot. 12:
180. 1898. Lectotype species: Parmelia cirrhata Fries.

Species in this subgenus are characterized by a narrow linear-lobed subfruticose thallus with sparse to well developed marginal cilia and a more or less channelled, brown to black lower surface that is rhizinate or bare. There are 16 species in the American tropics and four of these (P. cirrhata Fries, P. nepalensis Tayl., P. sorocheila Vainio, and P. vexans Zahlbr.) also occur throughout montane regions in tropical Asia. Several species in Africa are still under study.

Parmelia catawbiensis (Degel.) Hale & M. Wirth, n. comb.

Parmelia sorocheila var. catawbiensis Degel. Ark. für Botanik, 30A(3):65. 1941. Type: Mt. Le Conte, Tennessee, G. Degelius (Degelius herbarium, not seen).

Degelius recognized this entity as a variety because of the negative K test. Parmelia sorocheila produces K⁺ red salazinic acid. The two specimens from the United States that I have seen both contain gyrophoric acid and atranorin, and it is almost certain that the Degelius material has the same components. It is somewhat smaller than P. sorocheila, bare below but with fairly conspicuous marginal cilia; both have well developed laminal soralia. Parmelia catawbiensis occurs far north of the range of P. sorocheila and is probably endemic to the southern Appalachians where it grows on twigs of Abies and Rhododendron.

Specimens examined. United States: Virginia: Mountain Lake Biological Station, Giles Co., Hale 18365 (US). North Carolina: Roan Mountain, elev. 6200 ft., Hale 18087 (US).

Parmelia lipidifera Hale & M. Wirth, sp. nov.

Thallus ut in P. cirrhata Fries sed differt acidum protolichesterinicum continente.

Holotype: On deciduous trees, El Sumidero, near Tuxtla Gutierrez, Chiapas, Mexico, elev. 1200 m, collected by M. E. Hale, no. 20064 (US).

The thallus is externally indistinguishable from typical P. cirrhata. The lobes are narrow and strongly convoluted, marginal cilia rather dense, up to 1.5 mm long, and thallus rather fragile. The diagnostic character is the chemistry, P-, K-, with atranorin and protolichesterinic acid proved on TLC Brinkmann pre-coated plates. Parmelia cirrhata contains salazinic acid and reacts P+, K+ red but also contains protolichesterinic acid as an accessory substance. Parmelia lipidifera is rare in Mexico but apparently becomes more common in the range of P. cirrhata from Central America to Peru.

Specimens examined. Mexico: Jalisco: east of Autlán, Crum 943 p.p. (MICH); Chiapas: 2 km N highway 190 on road to Puebla Nueva, Hale 20172 (US), Mt. Ovando, Matuda, April 1936 (MICH). Guatemala: Quezaltenango: Volcán Sta Maria, Steyermark 33948 (MO); Baja Verapaz: Santa Rosa, Standley 69796 (MO). Honduras: Siguatepeque, Yuncker et al. 6627 (US). Peru: Machupichu, Cuzco, Herrera 3286a (US).

Parmelia neocirrhata Hale & M. Wirth, sp. nov.

Thallus subfruticosus, laxe adnatus, albido-cinereus, rigidus, lobis lineari-elongatis, divaricatis, sorediis isidiisque destitutis, margine sparse ciliatis vel nudis, superne nitidus, valde albo-maculatus, cortex superior 20 μ crassus, stratum gonidiale 30-35 μ crassum, medulla alba, 100-110 μ crassa, cortex inferior 12 μ crassus, subtus nudus, pallide castaneus vel centrum versus nigricans. Apothecia numerosa, subterminalia, imperforata, sporis octonis, 8-9X16-18 μ . Materia chimica: atranorin, acidum norsticticum, acidum salazinicum, et acidum protolichesterinicum.

Holotype: Cerro Azul, Morelia, Michoacán, Mexico, elev. 2300 m, collected by G. Arsène, no. 3726, 10/3/1910 (US; isotypes in TNS, UPS).

This species was first recognized in routine crystal testing of specimens identified as P. cirrhata, using the G. A.o-T. test. Norstictic acid was easily demonstrated, but it was shown with later thin-layer chromatographic tests that these specimens also contain salazinic acid and protolichesterinic acid. It was also possible to find consistent morphological differences from P.

cirrhatta, which always lacks norstictic acid, for they are only sparsely ciliate, often pale to almost white below, especially toward the tips, rather rigid and coriaceous, and usually fertile with large subterminal apothecia (Fig. 1).

Parmelia neocirrhatta is by far the commonest species of subgenus Everniiformes in Mexico, occurring in a broad zone from Sinaloa to Chiapas (Fig. 2). In this same range P. cirrhata is very rare but becomes the dominant species in Central America.

Specimens examined. Mexico: Sinaloa: 0.5 mi N Los Ornos, Breedlove 16759a (US), La Ferreria, Crum 900a, 943 (MICH); Jalisco: Estancia to San Sebastian, Mexia 1899-a (US), San Sebastian, Mexia 1560-a (US); Nayarit: 18 km from Ahuacatlán, Wirth 227 (US), near Compostela, Wirth 256 (US); Michoacán: Patzcuaro, Pringle 126 (US), Carrindapaz, Morelia, Arsène 8017, 8104 (US), Cerro Azul, Morelia, Arsène 3736, 3967, 8049 (US), 12 km W Uruapan, Wirth 341, 350 (US), 65 km E Morelia, Hale 21025 (US); Colima: s.l., Kerber in 1879 (US), near San Antonia, Wirth 139 (US); Cuerrero: Las Lumbreras, Mexia 9072L (F, MO, US); Hidalgo: Honey Station, Pringle 15555 (US); San Luis Potosí: Alvarez, Palmer 456 (US), 279 (MICH); México: 20 mi SW Jacala, Cain 27574 (TRT, US), Desierto de los Leones, Skorepa 5621 (US); Morelos: Kilo 87, Pringle 10713 (MICH, US); Oaxaca: Cerro San Felipe, Hale 20774, 21040 (US), 32 mi NW Oaxaca, Cain 27567 (TRT, US); Chiapas: Km. 1145 on highway 190, west of San Cristobal, Hale 20225 (US), 14 km W San Cristobal, Hale 20579 (US), S of Teopisca, Hale 20524 (US). Guatemala: Sololá: Volcan Atitlan, Kellerman 6029 (US).

Parmelia imitata Hale & M. Wirth, sp. nov.

Thallus ut in P. neocirrhatta sed differt acidum gyrophoricum continente.

Holotype: Carrindapaz, Morelia, Michoacán, Mexico, elev. 2100 m, collected by G. Arsène, no. 8042, 8/11/1911 (US; isotype in UPS).

This species is morphologically identical to P. neocirrhatta but differs significantly in chemical constituents, reacting P-, C+ red. Gyrophoric acid is accompanied by protolichesterinic acid. The species is known only from Mexico.

Specimens examined: Mexico: Hidalgo: Jacala, Chase 7398 (US).

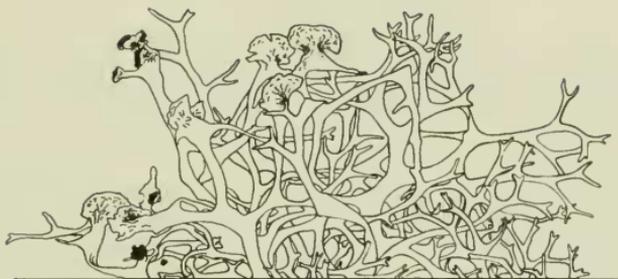


Figure 1. Parmelia neocirrhata (Hale 21025, US), X1.
Drawing by L. Anderson



Figure 2. Distribution of Parmelia neocirrhata.

Parmelia pseudonepalensis Hale & M. Wirth, sp. nov.

Thallus ut in P. nepalensi sed differt acidum norsticticum continente.

Holotype: Wood Station, km 87, Morelos, Mexico, collected by C. G. Pringle, no. 10713, 4 June 1904 (US; duplicates of this number may contain mixtures of P. neocirrhata).

Morphologically the species is close to P. nepalensis Tayl., a widespread species characterized by dense rhizines below. The thallus in both species is rather more rigid than in P. cirrhata and the lobes sometimes only weakly convoluted or even flattened. Thin-layer chromatographic plates show atranorin, norstictic acid, salazinic acid, and protolichesternic acid. Parmelia nepalensis lacks norstictic acid. Parmelia pseudonepalensis has a fairly restricted distribution in Mexico from Jalisco to Oaxaca.

Specimens examined. Mexico: Jalisco: La Ferreria, E of Autlán, Crum 943 p.p. (MICH), San Sebastian, Mexia 1542-a (US); Michoacán: Carrindapaz, Morelia, Arsène 8016 (US), Cerro Azul, Morelia, Arsène 3724 (US), 65 km E of Morelia, Hale 21026, 21032 (US); Mexico: 10 km SW Cahuacán, X. Madrigal 1423 (US), Popocateptl, Cain 27571, 27588 (US), N of Acambay, Cain 27557 (US); Oaxaca: 32 mi NW of Oaxaca, Cain 27567, 27566b (TRT, US), N of Tlacolula, Ernst 2339 (US), Cerro San Felipe, Hale 20716 (US).

Parmelia arsenei Hale & M. Wirth, sp. nov.

Thallus ut in P. nepalensi sed differt acidum protocetraricum continente.

Holotype: Carrindapaz, Morelia, Michoacán, Mexico, collected by G. Arsène, no. 8016b, Feb. 1909 (US; isotype in UPS).

This species, as with P. pseudonepalensis, is morphologically similar to P. nepalensis but contains atranorin and protocetraric acid only, apparently without protolichesternic acid. The color test is P+ red but K-. This is a rare species in Mexico and occurs at one locality in Peru.

Specimens examined. Mexico: without locality, Bourgeau (BM); Michoacán: 12 mi W Uruapan, Wirth 342 (US). Peru: Cajatambo, Landeman 5307 (BM).